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ABSTRACT

As the Chinese economy opens up to the outside world, the decision to engage in joint ventures with foreign capital is among the most important national policies. Significant direct consequences of joint ventures are the influx of foreign capital, expanding exports, and employment creation. However, the great importance of joint ventures lies in their indirect effects, such as the modernization of production processes, backward linkages in quality control and modern industrial standards, management, and training. The economic results have been very favorable. Disincentives to foreign investors are excessive complications and other barriers in dealing with the government, cultural distances, and language barriers. In addition, the Chinese have imported the competitive model of poaching the best workers but not the protections against some of the model's shortcomings for training. The Chinese can learn from the problems of training policies in Western countries, including the chronic problems of school-based training that results in mismatches between training and needs and the reluctance to commit resources to training. Discussion regarding training policy should touch upon legislation reestablishing a minimum level of expenditures on training, tax rebate policies to encourage those expenditures, and reestablishment of the apprenticeship system. (YLB)

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Discussion Paper No. 39

THE MEANING OF FOREIGN INVESTMENT IN THE CHINESE ECONOMY

BY
CLAUDIO DE MOURA CASTRO

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THE MEANING OF FOREIGN INVESTMENT IN THE CHINESE ECONOMY

CLAUDIO DE MOURA CASTRO*

I. The opening up of the Chinese Economy to foreign trade and outside influences

After a long period of isolation the Chinese economy opens up to the outside world and, in particular, to Hong Kong. Among the most important policies along these lines is the decision to engage in joint ventures with foreign capital. This deliberate move reveals a desire to introduce a certain number of changes in the economy. As stated by the Chinese authorities, they want foreign capital, increased exports, foreign technology, higher employment and some experimentation with market economics.

Even if the Chinese authorities had a very clear order of priorities on what they expected to obtain from these joint ventures, it is not easy to predict the outcome of such an open and pluralistic process. Therefore, it is appropriate to take stock of what really happened after almost ten years have elapsed and concrete results are present.

In the first sections of this note we try to list the possible consequences of this form of foreign investment, confronting these a priori *expectations with what seems to be happening - according to our limited observation. Then, we discuss training issues, comparing our observations with Western experience. Finally, we make some general comments on training policies for China.*

This essay is mostly based on interviews with the Chinese authorities and visits to firms. A detailed account of these visits as well as a more comprehensive treatment of some issues is to be found in the paper Multinationals in China: Transfer of Technology, Management and Training.

* This paper is a partial result of an ILO Mission to China, organized by the Bureau of Multinational Enterprises and sponsored by UNDP. The purpose of the mission was to visit multinational enterprises in China and comment on the legislation that regulates their functioning in the country. The author is grateful to all the Chinese authorities that organized the visits and supported the team with logistics and patience for our needs. Also very much appreciated was the goodwill and openness of managers and employees of the firms visited.

II. The direct Economic consequences

This section reviews the most important direct consequences of joint ventures for the Chinese economy.

1. The influx of foreign capital

China is an economically poor country that tries to develop very fast. Under such circumstances, the availability of capital will always be a big constraint. Hence, the possibility of obtaining risk capital from abroad is a very welcome idea. In fact, joint ventures have brought in considerable resources. Close to 12 000 joint venture contracts have been already signed and about 6 000 are in operation.

In Shenzhen, the earliest and the largest of the Special Economic Zones (SEZ), 1.8 billion dollars have already been invested. But one must take into account that in terms of China, or even in terms of foreign investment, this is a very modest amount. State enterprises in this same region have investments many times greater and the same is true for other forms of direct investment ("processing industries"). In other words, China being a country of such large proportions the quantitative magnitude of joint venture investment is very limited.

2. The roles of joint ventures in expanding exports

China needs sophisticated equipment for its industry, it needs raw materials and other products at an increasing rhythm. The inevitable consequence is that it has to export more and more. Most joint ventures are indeed focusing on export generation In fact, this is one of the criteria for approval of projects.

Although we do not have the figures on the participation of joint ventures on the exhilarating growth of Chinese exports, it is a known fact that while being important, it is much less than those due to the "processing industries" which are much easier to set up and require little effort from the Chinese side. The Chinese call processing industries firms that are totally owned by foreigners and that tend to specialize in processing imported parts or raw materials (They correspond to what is known in Latin America as "maquilladoras").

3. The impact on employment creation

In a country of enormous and still growing population, the quest for employment creation is unavoidable. Most countries with high population growth rates are facing grave problems of unemployment. Hence, all help that can be obtained from foreign investment is in principle welcome.

If we take the case of Shenzhen for which we have more information, 78 000 jobs have been created in joint ventures. While this is an impressive number, notice that the processing industries created 200 000 and the state enterprises (plus internal joint ventures) have created another 200 000. From a broader perspective, the Shenzhen SEZ has created close to one million jobs, less than 10% being in joint ventures.

If we look at the national level, given a total close to 100 million workers in the modern urban sector, the joint ventures have created less than one per cent of this employment.

In other words, the joint ventures again fare very modestly. Of course, there is indirect employment creation in the form of the consumption by the joint venture employees and that resulting from the purchase of raw materials from other enterprises. But the same exercise performed for the purely Chinese export-oriented enterprises would show results about twice as large as those of the joint ventures.

None of these consequences mentioned above are minor or without importance. Yet, they are on the whole very modest. The meaning of this entire reasoning is that we must look for the impact of the joint ventures elsewhere.

III. The learning path: the most vital lesson

We fully endorse the opinion of some Chinese authorities who emphasized that the great importance of joint ventures lies less in its direct consequences than in the indirect effects it may have on management, technology, manufacturing practices and, last but not least, on training. It is the learning side of joint ventures that justifies the size of the financial effort to create them.

1. The impact of technology transfers

The isolation of China from the rest of the world for several decades prevented the country from benefiting from the fast technological and managerial progress of some Western nations. The opening of the economy in the present decade is seen as an opportunity to catch up. And joint ventures are strategically placed to act as a bridge between industrialized countries and China.

a. The modernization of production processes

Joint ventures bring more up to date technology to China. Although our visits were limited mostly to foreign investment, we had the impression that they are superior to entirely domestic factories in terms of equipment and technology. Opinions from those we interviewed confirm this hypothesis.

We saw numerically controlled machines in relatively small enterprises, while larger ones owned by the state and operating in the same sectors still did not have them. The organization of assembly lines according to state of the art techniques was also very clearly demonstrated in several joint ventures.

Precision work of the highest standards could be seen in several industries visited. Quality control is a major constraint in any country that industrializes. Hence the importance of the examples given by some joint ventures that operate under the most strict levels of quality, deploying a large fraction of their work force in inspections and checks. Even during our rapid visits we came across foreign inspectors verifying quality, and even packaging. In some firms the only imported equipment was to be found in the quality control laboratory.

We are quite convinced that joint ventures are playing a most important role in the diffusion of new fabrication technologies, better habits of quality control and greater familiarity with high precision work.

b. The backward linkages in quality control and modern industrial standards

There is one aspect of transfer of technology that needs to be emphasized. Machines are easily bought, and even the most sophisticated of the materials can also be purchased without difficulties. But there is something that is more important and cannot be simply bought. These are industrial standards and practices. Foreign management brings it when it sets up an enterprise. One of the most important consequences of such foreign presence is the transfer of these practices by means of the purchases of raw materials and parts from the domestic markets, both in the SEZ and in China as a whole. This is more evident in the automotive industry than in any other area. An automobile needs more than 10 000 parts and manufacturers do not like to depend on a single supplier. Therefore, the exact specifications, the quality standards and the rigorous delivery schedules are imposed on local automotive parts suppliers. In other developing countries this has been shown to have very healthy consequences for the economy. Notice that one of the factories visited has already 300 suppliers and that, by international standards, is still less than would be desirable. These suppliers usually receive training, technical assistance and inspection from the factory.

2. The Management Revolution

Most Chinese authorities we met and most managers of joint ventures agreed on the importance of management for productivity. Some mentioned the strategic position of joint ventures in that respect, as compared to purely local enterprises.

While we lack comparisons with purely Chinese enterprises, the unanimity of the opinions expressed during our visit suggest that there must be some truth in that. In fact, several managers indicated that joint ventures, in and out of the SEZ lead to superior productivity due to better management.

We saw in a State firm maybe 20% of the workers sitting idle because raw materials had not arrived. In another, we saw about one fourth of the very expensive automatic machines being repaired or adjusted and much evidence of defective products removed from the assembly line. That kind of problem was not be observed in the joint ventures.

Some foreign managers suggested that they needed to improve work discipline, impose better cleaning standards, put pressure to reduce absenteeism and, to put it bluntly, force employees to work harder. While these efforts might result in tensions in the short run, the long run consequences are good for the Chinese economy. Some foreign managers mentioned that in some nearby countries workers have considerably higher productivity and that the Chinese should be able to catch up. We are not necessarily condoning all practices that will lead to higher productivity. In fact, there are many objectionable ways of achieving it. Nor are we endorsing ways of increasing productivity that go counter to Chinese values. But within the bounds of what is acceptable and welcome to the Chinese, the role of better management in increasing productivity can never be underestimated.

Hiring practices also present considerable evolution with respect to those previously utilized. The search for the best man for the job is pursued more intently. And the description of what this man is like also takes different contours. For instance, diplomas are no longer taken at face value. In some joint ventures they no longer guarantee much. We visited one factory which took college graduates as maintenance electricians. Is that a waste of education? Not necessarily. May be this is as much as graduates of inadequate colleges can do. While employers are not always right in their choices, they usually know what is required to perform a given occupation. They realize that what is written on certificates may fail to materialize in the workshop.

3. The most vital import: know-how via training

No matter how important are machines, technology or know-how, there is one dimension of technology transfer that will stand above the others. And it has to do with the people who use the machines. Report after report from Europe and the United States show that one of the most critical conditions for productivity increases is the training of the workers. In these days of very open and competitive international markets, anybody can purchase similar machines. One of the main causes for the differences in productivity with which they are used is the capability of the workers. Enormous differences in productivity can be obtained with the same equipment. Some of the managers we interviewed mentioned that the same assembly lines produced more in Japan than in Hong Kong and more in Hong Kong than in China. Why? It is not a matter of dexterity or innate abilities. It has to do with the understanding of the productive process, faster diagnosis of problems, better co-ordination between different segments of the factory and so on. Motivation alone is not sufficient, much as it is important. Training is the answer. But not any training, it has to be a very co-ordinated effort.

As we read about the Chinese trajectory in

vocational and technical training we saw a basically sound system. In fact, it has been able to avoid some of the problems that plague many developing countries. In particular, we liked the relatively close connection of enterprises with technical and vocational school and the significant number of firms that contract training with these institutions.

Yet, the system is far from perfect and is in need of some revisions. At the same time, Western training institutions have had considerable progress that remains unknown to China.

Joint ventures have a role to play in bringing to the country some of their training experience. We see frequently that some of the higher level staff spend time in headquarters or in other branches. Some even go to colleges or similar institutions in the country of origin of the firm.

For the skilled workers, in many cases, instructors from the foreign partner come to teach courses and seminars. Or again, foreign workers and managers come to work in China and in their everyday contacts with their colleagues much is transmitted of their know-how.

Those enterprise that need training organize courses for their employees. Some of them have their own training centres. Instruction materials from the foreign firms are sometimes utilized.

To sum up, we can see an effort of training the local workers in the techniques and procedures brought in by the foreign enterprises. As far as we can tell, these formal and informal means of transmission of skills and know-how may be among the truly important contributions of the joint ventures.

IV. Achievements and Problems: The performance of the best joint ventures

In the previous section we presented some consequences of the joint ventures for the Chinese society. On the whole, we had a favourable impression. In what follows, we attempt to point out some issues that remain unclear, some grey areas and what we perceive - perhaps wrongly - as difficulties or opportunities lost. Perhaps this last expression captures better the gist of our argument. We did not find much wrong with joint ventures. What we found is that many opportunities are being missed. More could be obtained from them, to the benefit of all concerned.

1. Good economic results

On the whole, the economic results are very favourable. Of course, we visited some of the most successful joint ventures. We are aware of the fact that maybe 20% are not in very sound conditions and according to some critics the proportion is larger than that. But considering the speed with which they were installed, these are very modest rates of doubtful cases. Most Third World examples of industrialization at such high growth rates show a much higher proportion of failures.

The enterprises we visited indicated that their results were quite satisfactory. This is a significant achievement, considering that some operate in very competitive international markets.

Also to be noticed is the heterogeneity of the enterprises. They go from the fully automated (beverage cans) to the crafts (auto repair), from the high tech (electronic parts) to the traditional (dolls) and from hardware (automobiles) to services (banks and hotels). That being the case, there are obvious limits to the generalizations that are warranted.

Compared to state enterprises, they are able to pay wages that are at least 20% higher. Having this advantage they can attract the best youth to work with them. And as stressed previously, the quality of the labour force is one of the most vital factors in determining productivity. To some extent, it is a circular process. Higher wages attract better labour and better labour leads to higher productivity which allows better remuneration. State enterprises are considerably more conservative in their wage policies. Not only that but their ability to follow alertly the changes in the labour market is hampered by heavy and slow bureaucratic procedures.

The system of contract labour is also very beneficial to joint ventures. As some managers suggested, permanent workers are less motivated to take further training or responsibilities. One state firm we visited had to invent a very complicated system of work brigades in order to take away from the shop floor the least productive workers. This problem does not exist in the joint ventures.

We found a significant difference in attitude between Beijing and Guangdong. In Beijing, where joint ventures are relatively rare, there is still some prejudice against the novelty. "They have low status" we were told. "I would not work there earning 50% more if I had to loose my permanent contract" told us a manager. More surprising, his son also preferred a permanent job in a state enterprise. For that reason, even joint ventures have to offer longer contracts to attract senior skilled workers from other enterprises.

By contrast, in the Guangdong province joint ventures are already part of the scene and lower job security accepted as a fact of life. The whole environment is closer to market economies. Operation of firms is different and people's minds are closer to the West. "We go to the market!" proclaimed a manager stating how they no longer depended on the government to find workers.

One of the problems we found in several firms was the too narrow spread between minimum and maximum wages. In the state enterprises this was claimed to be a big problem. The small differences in wages are not sufficient to motivate workers to higher workloads and responsibilities on more critical occupations. In some state firms the highest wages are less than 50% higher than the lowest. If we consider all the fringe benefits that accrue to the workers and are not included in the wages (like food bonus etc) the spread is even lower.

But even in some joint ventures the spread was insufficient to attract or retain highly qualified workers. In fact, the spread in joint ventures is usually much narrower than in industrialized countries (1:2 to 1:5 as compared to 1:7 to 1:10 in industrialized countries). Developing countries have spreads of 1:20 or 1:50 and it is to China's credit that such discrepancies do not exist there.

One of the reasons for insufficient spread is that the Administration Boards of these firms - where most of the time the Chinese have majority vote - tend to be more conservative in this respect than the managements that would like less short run profits and better quality skilled workers and technicians. In other cases, the small spread is a consequence of the overheated economy of Guangdong. Cost of living is high, forcing minimum wages up (to around 300 Yuen in several firms). At the same time, economic factors within some firms do not permit the higher wages that would attract the better workers. Some older joint ventures are losing many good workers, being unable to pay wages that are sufficiently high to keep their best workers.

Another aspect mentioned was the greater chances of promotion offered to younger workers entering joint ventures. Some managers mentioned that this was more important than salary differentials. State firms have more rigid rules for promotion and it seems that seniority has a greater weight. On the other hand, there is a difference between the fact of being a joint venture and the fact of being a young firm. New enterprises do not have the higher echelons blocked by older workers, regardless of ownership.

In many ways, the labour market is very segmented. In the hotel and catering business the turnover is enormous, 20% of the labour force of some institutions quit their jobs each year. By contrast, firms that have assembly lines tend to have workers who stay much longer, due to the relatively modest market value of their skills outside that factory. Yet, we were surprised to find little mobility of eminently versatile workers as the tool an die makers who in the West have very high wages and can easily find jobs anywhere.

2. Dealing with the government

We spoke to some government officials who claimed that foreign investors are reticent to come due to an initial fear of the unknown. However, they also claimed that once they see the local scene they change their minds because all the pieces fit into place. In addition, the procedures for approval of projects were very fast.

We cannot evaluate the accuracy of such statement. However, time and again Chinese managers were more reticent with respect to these points. And a few foreign managers had opinions that differed even more.

There were complaints of excess of legislation, that the rules were unclear, that even Chinese authorities had to make endless consultations and often could not agree. Conflicting legislation and scattered rules that were not mastered by any single administrative body were also mentioned.

The long time it takes for preparation, approval and negotiation was a source of complaints. In fact, a few of the procedures are so complicated that some government agencies specialize in helping foreign investors deal with Chinese formalities.

Western businessmen complain all the time against their governments. This is almost part of the system. Therefore these complaints in China have to be taken with a grain of salt. But maybe there is something to them. In all fairness, it must be stressed that there is a huge difference between the initial difficulties to establish and agree on ground rules and the subsequent operation that is much easier and free of administrative hurdles.

From our own observation we were amazed at the complications of the wage system. The number of fringe benefits and payments back and forth between firms and governments remains a great mystery to us. Yet, some foreign managers did not understand either what were some of these transfers.

We are not convinced of the advantages of such a maze of components of labour costs. Firstly, it scares off foreign investors. Secondly, it makes it very difficult for a firm to create a merit salary grid (as one manager complained). Thirdly, it overloads the firm with a multitude of services that disperse attention of management and are better left to specialized agencies or to the market. This is the case with housing, health, food, and some forms of leisure. The firm is not necessarily the better provider of each of those services. While the joint ventures are already making some modest steps in simplification, much remains to be done to streamline operations.

Considering that inflation cannot be eliminated overnight, contracts with foreign investors need to include an escalator clause to compensate for the erosion in the purchasing power of the Yuan. The absence of such corrections is a source of misunderstanding and ill feelings.

Some Chinese authorities expressed hopes of attracting the large multinationals to China. While they probably will succeed in some cases, under the present situation there are still some disincentives in the form of excessive complications and other barriers.

3. Cultural distances and language barriers: The West via Hong Kong

Reading about joint ventures prior to traveling to China gave us some ideas on what a joint venture would look like. But in many ways we were surprised. We could not imagine the sheer size and wealth of places like Shenzhen and Zhuhai. On the other hand, we imagined joint ventures as a mixture of Chinese and foreign firms. In that particular, our images were also shattered.

We found only one enterprise receiving Western support directly. In all the others, the West comes through Hong Kong. From the figures we could piece together, only about 10% of all foreign enterprises in the Shenzhen area (including processing industries) do not have the financial support from Hong Kong. The participation of Hong Kong seems to be

even higher because in some of the firms where Hong Kong capitals are not present, still, operations may be done through their Hong Kong subsidiaries.

This is a very particular style of Westernization without the West.

The West is present via of Hong Kong.

We do not question the wisdom of this strategy as whole. It is an intelligent way of making the bridge by means of overseas Chinese who have been able to understand and adapt to the West while retaining a good part of their Chinese cultural identity. We are not aware of particular advantages granted to Hong Kong investors but it seems that it is less a matter of creating additional incentives than the advantages of cultural, language and physical proximity.

Yet, there are some problems and some disadvantages. In practice, joint ventures are not at all Western firms with Chinese workers. They tend to be firms that utilize Western machinery and respond to Western quality standards. Some management innovations are present and productivity is higher on account of many factors including those. But it is a pale version of what a Western enterprise looks like.

For centuries, Chinese culture has preached equilibrium and the "way of the middle" and we can only agree with that. Chinese firms do not have to be completely like Western firms. Western enterprises have had problems in the past. Brash capitalism has created a bad work environment and for the last many decades Western managers have had to recreate a sense of participation that the impersonality of wild capitalism had destroyed. In that respect, the West is still searching for its own ways. But we think that the middle way between West and East still has not been reached in China. Enterprises are too Chinese.

Many firms existed before the joint venture was created. Since a good part of the management and the workers remained in place, even the more modest changes are difficult to impose. As we say in the West, one does not teach an old dog new tricks.

More than that, the presence of foreigners is not very dense in several of them. The Chinese majority in the Board may impede deeper changes.

The management revolution is still an incomplete project. We saw very often the utilization of two-way radios and "bips" by managers, showing that they are alert to practical tools such as these. Yet, computer utilization is extremely limited. We saw very little of it and in some cases, a poor utilization of the machines, like one firm that uses computers to consult prices of parts but not for inventory control which is an obvious use of computerized databanks.

The attempt of Western managers to impose new rules often stalls. Tension is created and conflict may set in.

One of the most serious problems is the language barrier. We found that one in one thousand employees or managers of joint ventures can hold a serious conversation in English. Given the pattern of circulation of managers from one branch to the other (adopted by large multinationals) and to the mature age of competent experts and managers, one could not really expect them to learn Chinese. In contrast, while Latin American firms may lack the extreme dedication and the discipline of Chinese workers, any branch of multinationals there will have many employees who speak English and the foreign managers learn Spanish and Portuguese.

The language barrier aggravates the difficulties of communication between cultures. Non-Europeans who speak English or French as their first language still have serious problems of cross-cultural communications. But at least, they have all day long to try to understand one another. When interpreters are needed, as in the case of China, the barriers persist much longer. As non-native English speakers we are in a comfortable position

to state that China faces a serious handicap in its inability to speak foreign languages.

As a result of factors such as these we found that Western influence in management and organizational matters are present but less than desired. As a foreign manager put it, both sides have to compromise and work hard in understanding each other.

The challenge is to combine market incentives with a sense of participation within the bounds of Chinese tradition.

But perhaps of more immediate consequence, the inability of the Chinese to speak foreign languages and communicate more effectively with the West has given Hong Kong a position of great preeminence. They have become the gate-keepers of Chinese joint ventures. American firms design the products, Hong Kong contracts out the production in China and the Chinese manufacture them at low costs. For a while this may be a good solution. But Hong Kong businessmen have become the best paid interpreters in the world.

4. The transition from planned to laissez faire training: Wasting unique training opportunities

We have mentioned before that multinationals were having an important role in training their employees. This proposition is essentially correct. Yet, we felt that more could be achieved.

In the early 1980s it was estimated that close to one third of the workers were being trained within enterprises or in other arrangements. This effort was necessary to catch up after a long period of stagnation in training. Yet it was possible to achieve it, given the form of planning and economic rationality utilized. Firms were being instructed to train their personnel and to go to bear the costs of doing it.

Nowadays, firms have to watch their costs, their productivity and their profits if they want to prosper or even stay in business. Economic rationality is applied inside the firm, not for the economy as a whole.

As a result, firms only train to the extent that it may bring tangible results in the near future. Also, it is not good economic practice to train just to see other firms snatch the trainees. It is a known fact that firms do less training than they would when they are afraid of losing the employees they train.

Joint ventures are expected to train their workers. In fact, they signed a contract stipulating that they would train. But from what we know, this is a vague commitment, lacking concrete criteria of performance.

We made quick estimates of training expenditures in firms and found that in most cases they are way below 1.5% of the wage bill - which was the requirement beforehand.

Perhaps for that reason, firms do not fully benefit from the accumulated experience of their foreign partners. Conflicts with Boards that instead of more training want quicker profits or repayment of debts have been reported to us.

Very conventional forms of training are used in most cases, while headquarters deploy new forms and more sophisticated materials. We did not see any utilization of the newer delivery modes such as computers or video. Training materials of Chinese origin, reputed to be outdated, are used when the foreign partner has access to the very best.

The state technical and vocational schools can train a little more than 3% of the working population of Shenzhen. Given the high rates of growth of this town, this is not enough to meet the needs. Scarcity of trainers and the political difficulties of obtaining funds have been mentioned by some authors and we heard the same complaints from public officials.

One consequence of this scarcity is that joint ventures pirate the best workers from the state firms. In some cases, they may have to pay the training costs incurred by the firm but this does not amount to very much when one

needs skilled labour. But also, older joint ventures loose some of their best workers to the newer ones.

There is a brain drain inside the country by which foreign and richer enterprises poach the best workers of the others. These are the rules of the competitive game that are being applied in the Chinese economy. There is nothing intrinsically wrong with these rules and we cannot blame firms for understanding and using them in their own interest.

Yet, market economies have discovered these same problems some time ago and developed ways to overcome them by means of rules, regulations and incentives. For the time being, the Chinese have imported the competitive model but not the protections against some of its shortcomings for training.

Before proceeding it may be worth to sketch briefly the situation in Western countries, examining problems that may be of interest to the Chinese.

V. The problems of training policies in market economies: Learning from Western experience

1. The chronic problems of school-based training: Mismatches between training and needs

The most classical solution to the problem of firms having insufficient motivation to train has been to let public agencies do the training. This is the way it is done in most countries and there is no reason to suppose that this formula should not persist for a long time to come. In fact, almost all countries have elaborate systems of vocational training, with programmes being offered at different levels and catering sometimes to several hundred occupations. Even the Germanic countries that rely heavily on apprentices have the conceptual and theoretical part of the apprenticeship done at training centres or schools. It is because of this duality or work and structured learning that it is called the "Dual System".

Yet, it has been observed time and again that schools tend to develop a dynamic of their own and that they progressively lose touch with the labour market. Teachers and trainers become involved in their own world and allow their training to become divorced from market needs. In particular, the heavy investment required to offer a given course of studies (equipment, teaching material, training trainers) tends to generate much reluctance on the part of the school to abandon already established lines.

In countries in which labour turnover is large, less and less schools can keep up with the evolution of the market. More and more, students are trained for non-existing jobs or for jobs they cannot obtain in practice. Expectations of schools, students and employers become confused and the results are not necessarily very good. This is an exaggeration of what may happen in practice but, to some extent, it is a problem that very often occurs.

Therefore, one of the greatest challenges of training policies is to devise ways of narrowing this distance between training and needs. One of the most persistent trends in the last few years in Europe and North America is the creation of new mechanisms to help insure the good fit between supply and demand of training.

Firms contracting out training with schools are a good solution to alleviate the mismatch problem. Holland and the United Kingdom are moving very fast in this direction. Increasingly training programmes are being pushed to obtain a good part of their funding from contracts with enterprises. Incidentally, this was found to be one of the most positive features of Chinese training. Chinese firms very often contract out training programmes for their workers with vocational schools or training centres.

Mechanisms rewarding a good fit be-

tween training and jobs are being developed in great profusion. It would not be appropriate here to describe these solutions in a comprehensive way. But it may be worth citing a few examples.

European countries have created several programmes in which firms are encouraged to take youth as trainees or apprentices, without any commitment to a subsequent contract. They are, in addition, subsidised to train them according to some minimum standards previously agreed upon. The rationale of this programme is that firms will take the burden of doing the training away from government schools and always achieve a good fit between training and needs.

The French apprenticeship tax forces firms to pay to the treasury at the end of the year an amount corresponding to about 1% of the pay-roll. Yet, they can use these funds instead for contracting out training with schools or even with independent trainers.

Vocational school teachers, particularly in the United Kingdom and the United States are being encouraged to spend time in enterprises, either working or in internships during vacations, in the hope that this will give them a keener perception of the needs of industries. A few examples are known of firms that go as far as inviting teachers of technical institutes to just spend time inside their walls, with no further obligations, just to give them the flavour of how a factory operates and what is the nature of everyday work.

In the opposite direction, engineers are being sponsored to leave their industries for a few months and go to engineering and technical schools. There, they interact with their staff and bridge the communication and trust barrier.

The multiplicity of schemes to bring training closer to firms is something that appears in countries that operate both in market and in centrally planned economies. Some East European countries like Bulgaria are giving greater freedom to training centres to sign training contracts with firms, at the same time as they get very small budgets from central authorities. They are expected to finance most of their operations out of project money.

The higher the growth rate the higher the risk of a misfit. And increased labour turnover only makes the problem more serious. The opening up of the Chinese economy will inevitably increase manifold the changes of jobs and occupations undergone by the typical worker within his lifetime.

But no matter how much effort is exerted, there are shortcomings and limitations to training done in schools and training centres. They may offer the wrong training or training to the wrong person. In addition, there is always something different in school-based training. It may be stronger in theory and conceptual development - and for this reason alone institutional training will survive. But it lacks a real life dimension that only the work environment can provide.

Therefore, as much as institution-based training has a permanent and important role in any country, a good share of in-plant and on-the-job training is necessary. Yet, Western countries have discovered that the incentives for firms to provide optimal levels of such training may be lacking in free market economies.

2. The conflicts between the rationality of the enterprise and common interests

In contrast to the ever pending dangers of mismatches between training and market needs, the training offered by firms always responds closely to a perceived demand. But firms have no interest in going to the trouble of training workers without a clear and positive payoff.

Every firm wants a trained labour force. Yet, if they go to the trouble of training they may lose the worker later on. They will have incurred a cost and not benefited from it. Since each firm reasons the same way, every-

body prefers to wait until the other trains and then make a good offer and take away the trained worker. As a result, there is less training taking place than would be in the best interest of everybody.

One way out is for firms to organize themselves into collective bodies and share together the costs of training. But Western countries have gone further. Through the years incentives and constraints that lead firms to train more have evolved.

3. The incentives for training at firms: tax rebates, levies on pay-rolls, taxes on non-trained workers and direct subsidies to training

As mentioned, one of the problems with in-plant training is that firms are reluctant to commit enough resources to it. Purely market mechanisms lead to a very conservative training effort on the part of most firms.

Therefore, a very large variety of training provisions have been developed in Western countries. A very frequent provision has already been used by China. It is the obligation to use 1.5% (or some other share) of the payroll for training. An interesting variety of this law is to say that the firm may either spend the money or give it to the official training system. The Brazilian training law operates this way. Firms that do not want to undertake the training themselves merely have to pay the training system (operated by employers associations) the 1.5% levy. Others can use the money themselves and operate their own training system. But also possible is the use of these funds to contract out custom-made courses with the training system.

Lower wages for trainees can be a very important incentive for firms to train. In the Federal Republic of Germany, employers often train more workers than they need, because these youth earn lower wages during training while already giving good productivity. This is one of the reasons why employers are willing to take on so many apprentices. In fact, about half of the apprentices quit their jobs by the time they finish their apprenticeship. This is not necessarily because they want to quit or because employers are dissatisfied with them. In many cases, employers just want to replace them by new apprentices that cost less. As long as the quality of the training offered along with the work they have to perform can be closely monitored, the system works well for all parties. Employers obtain cheap labour and apprentices receive good training. But the good functioning of the system requires a very good relationship and communication between employers, workers organizations and training authorities. Other European countries have never managed to operate apprenticeship programmes on a significant scale. Attempts on the part of the Federal Republic of Germany to replicate the dual system in developing countries has met with moderate success, requiring much adaptation of the original model.

Another often used scheme is to allow firms to reduce their income tax more than proportionately to the value of their expenditures on training. In the Brazilian case, a firm that spends in training their own personnel can reduce by two times the cost of the training the amount due as income tax. This has lead firms to engage in training over and above what they would do otherwise. This system can only function as a complement to other training provisions as not all firms pay much income tax. Furthermore, it has been found that smaller firms are reluctant to prepare the projects required to benefit from this law. An inherent risk of this law is that firms may try to disguise other activities of a different nature (like explaining to salesmen the features of new products) as training activities.

Newer and more often used in Europe are schemes to finance the training of young workers employed by the firm on an experimental basis. Several European countries have provisions by which firms are encouraged to hire youth for limited periods of time and without any commitment to keep them

afterwards. But in addition, the firms receive funds to be used for training these youth. In many ways, these schemes bear some similarities to the Germanic dual system.

The idea of giving subsidies to master craftsmen who want to take apprentices has been used with some success by a few developing countries. But thus far it is still something that operates only on a experimental scale.

A very interesting scheme found in Switzerland is to have firms voluntarily get together and train workers of others in their respective specialities. For instance, Charmilles Technologies offers to interested workers of all the other associates a training programme in CAD-CAM.

VI. Some thoughts about training policy

In some regions of China, firms are moving towards a style of functioning that approaches in their everyday operations the capitalistic economies. As a result, they are beginning to witness the appearance of some of the same problems that capitalistic countries have faced. It would not be appropriate for us to make concrete suggestions. Yet, it may be worth listing some ideas that could be retained for further discussion.

Dealing with joint ventures:

1. It would be useful to include a better spelled-out and detailed training commitment in the contracts of the joint ventures. In particular, it would be pertinent to establish with them a clear goal of preparing Chinese workers or technicians for the technically complex positions. The contract of the joint venture could include provisions specifying minimum financial allocation as well as the positions in which replacement would be sought.

2. We fear that provisions applying to all firms would not be appropriate. It could impose unbearable and useless burdens on some firms and, at the same time, be insufficient for others. Maybe the government could negotiate case by case the training commitment of the joint venture. Given the wide diversity between firms, negotiations could be based on the training and skill profiles of the foreign manufacturing firm that enters the joint venture. For instance, the training effort should not be less than in the headquarters.

3. Legislation could create provisions to have firms train more workers than needed, in the case of those that take skilled labour from state enterprises. In other words, after they become fully operational, they could return to society the equivalent of the training they obtained without paying.

4. It may be advisable to avoid treating joint ventures and processing industries as if they were completely different entities. From the point of view of training, there are joint ventures with little training potential and processing industries with more than is usually assumed. Without creating additional complications for investors, the incentives for training developed for joint ventures could also apply in the case of processing industries.

5. Provisions could be included in the contract to utilize the training materials and experiences from the foreign partners. Sufficient funds for translations should be provided. Subsidized translations could be considered public domain and used by other firms.

Dealing with training policies in general:

1. Legislation could re-establish a minimum level of expenditures on training. This amount may be used directly, paid to other institutions or given to public training systems. Several countries use levies of 1-2 per cent and properly administered this is a good system.

2. It would be interesting to experiment with tax rebate policies encouraging training expenditures. Those who train more would

pay less taxes. A few countries have created such systems and it seems clearly to lead to higher levels of training expenditures. There are dangers of creating too much bureaucracy to administer the system and some examples of poor utilization of this tax rebate are well known. Furthermore, it tends to benefit more the larger enterprises. But as a complement to other policies, it is a very useful incentive mechanism.

3. The apprenticeship system could be reintroduced, taking cues from the experience of the Germanic countries. The so-called "dual system" associated with Germany, Austria and Switzerland still gives good results in these countries. When reproduced in other countries, some adaptations may be required, as some very particular conditions are not matched elsewhere. But variants of the system have been adopted with success by many Third World countries. As labour mobility increases, more important become those solutions that transfer to the firm the individual decisions on how to train, to whom and on what.

4. The mechanisms by which school-based training links with the needs of enterprises could be preserved and expanded. Internships of instructors in enterprises have been mentioned, as well as internships of engineers in training institutions. But these are only two examples among many of closer interactions between firms and training institutions.